

Appendix A References

A-1. HQUSACE Publications

ER 1110-1-8100

Laboratory Investigations and Material Testing

ER 1110-2-8152

Planning and Design of Temporary Cofferdams and Braced Excavation

EM 1110-2-1602

Hydraulic Design of Reservoir Outlet Works

EM 1110-2-1605

Hydraulic Design of Navigation Dams

EM 1110-2-1606

Hydraulic Design of Surges in Canals

EM 1110-2-1610

Hydraulic Design of Lock Culvert Valves

EM 1110-2-1611

Layout and Design of Shallow-Draft Waterways

EM 1110-2-1612

Ice Engineering

EM 1110-2-1613

Hydraulic Design of Deep Draft Navigation Projects

EM 1110-2-2002

Evaluation and Repair of Concrete Structures

EM 1110-2-2602

Planning and Design of Navigation Lock Walls and Appurtenances

EM 1110-2-2703

Lock Gates and Operating Equipment

ETL 1110-2-532

Reliability Assessment of Navigation Structures

Hydraulic Design Criteria (HDC) sheets and charts.

Available from U.S. Army Engineer Waterways Experiment Station, ATTN: CEWES-IM-MI-S, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199. A fee of \$10 is charged to non-Government requestors.

Conversationally Oriented Real-Time Programming System (CORPS) computer programs. Available from U.S. Army Engineer Waterways Experiment Station, ATTN: CEWES-IM-DS, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199.

A-2. CE-Sponsored Lock Hydraulic System Study Reports

Note: The following references are available on inter-library loan from the Research Library, ATTN: CEWES-IM-MI-R, U.S. Army Engineer Waterways Experiment Station, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199.

The availability of data presented in the following listing of reports is summarized in Appendix C.

<u>Number</u>	<u>Laboratory Code and Report Number</u>		<u>Description</u>
01	STP No. 19	Apr 1937	"Laboratory Tests on Hydraulic Model of Pickwick Lock Hydraulic System, Tennessee River, Pickwick Landing, Tennessee."
02	STP No. 21	Jul 1937	"Laboratory Tests on Hydraulic Model of Guntersville Lock Hydraulic System, Tennessee River, Guntersville, Alabama."
03	STP No. 27	Dec 1937	"Laboratory Tests on Hydraulic Model of Filling and Emptying System for Proposed Watts Bar Project Lock, Tennessee River, near Dayton, Tennessee."
04	STP No. 28	Dec 1937	"Hydraulic Model Tests of the Filling and Emptying System for the Chickamauga Project Lock, Tennessee River."
05	STP No. 34	Jul 1939	"Laboratory Tests on Hydraulic Model of Filling and Emptying System of the General Joe Wheeler Lock, Tennessee River, near Florence, Alabama."
06	STP No. 44	Nov 1940	"Laboratory Tests on Hydraulic Model to Determine Navigation Conditions in Approaches to St. Anthony Falls Locks, Mississippi River, Minneapolis, Minnesota".
07	BHL TR No. 8-1	Jun 1941	"Model Study of the Willamette Falls Locks, Oregon City, Oregon."
08-13	STP No. 46	Oct 1941	"Prototype Lock Hydraulic Tests to Verify Model Experiments." (This volume contains reports on studies of six separate lock systems.)
14	STP No. 48	Feb 1944	"Laboratory Tests on Hydraulic Model of Filling and Emptying System for the MacArthur Lock, St. Marys River, Sault Ste. Marie, Michigan."
15	STP No. 49	Feb 1944	"Laboratory Tests on Hydraulic Models of Filling and Emptying Systems for the New Lock No. 2, Mississippi River, Hastings, Minnesota."
16	STP No. 51	Aug 1945	"Laboratory Test on Hydraulic Models of a Submergible Tainter Lock Gate for St. Anthony Falls Lower Lock, Mississippi River, Minneapolis, Minnesota," by Warner and Hartigan.
17	STP No. 52	Jun 1946	"Laboratory Tests on Models of Lock Hydraulic Systems," by Webster, Warner, Hartigan, and Nelson.
18	WES TM 2-282	Jun 1949	"Vacuum Tank Tests of Model Tainter Valve for McNary Dam."
19	WES TM 2-313	Jun 1950	"Study of Butterfly Valves for Pearl River Locks; Model Investigation."
20	WES TM 2-309	Apr 1951	"Filling Characteristics, Algiers Lock, Intracoastal Waterway, Gulf Section, Louisiana; Model Investigation."

<u>Number</u>	<u>Laboratory Code and Report Number</u>		<u>Description</u>
21	STP No. 56	Aug 1952	"Laboratory Tests on Hydraulic Models of Filling and Emptying Systems for the New Cumberland Locks, Ohio River."
22	WES TM 2-358	Apr 1953	"Upstream Emergency Dam, Cheatham Lock, Cumberland River, Tennessee; Hydraulic Model Investigation."
23	STP No. 59	Jan 1955	"Laboratory Tests on Hydraulic Models of Filling and Emptying Systems for Auxiliary Locks, Mississippi River."
24	BHL TR No. 26-1	May 1955	"Navigation Lock for McNary Dam, Columbia River, Oregon and Washington; Hydraulic Model Investigation."
25	WES MP 2-146	Nov 1955	"Prototype Tests of Filling and Emptying Systems, McNary Dam Lock, Washington, October 1955."
26	STP No. 565	Mar 1957	"Laboratory Tests on Hydraulic Model to Determine Hawser Pull on Short Tows near Cumberland Main Lock, Ohio River, Suppl. Report," by D. L. Preston and J. J. Hartigan.
27	WES TR 2-497	Apr 1959	"Filling and Emptying Characteristics of Calumet-SAG Project, Illinois; Hydraulic Model Investigation," by J. H. Ables.
28	WES TR 2-500	May 1959	"Filling and Emptying System, Port Allen Navigation Lock, Gulf Intracoastal Waterway, Louisiana; Hydraulic Model Investigation," by J. H. Ables.
29	WES TR 2-519	Aug 1959	"Walter F. George Lock and Dam, Chattahoochee River, Alabama and Georgia; Hydraulic Model Investigation," by E. S. Melsheimer.
30	WES TR 2-527	Oct 1959	"Emergency Gate, Greenup Locks, Ohio River, Kentucky; Hydraulic Model Investigation," by E. S. Melsheimer.
31	STP No. 64	Oct 1959	"Laboratory Tests on Hydraulic Models of Filling and Emptying Systems for Chain of Rocks Locks, Mississippi River."
32	STP No. 68	Mar 1960	"Laboratory Tests on Hydraulic Models of the Filling and Emptying Systems for Jackson Lock, Tombigbee River, Alabama."
33	STP No. 69	May 1960	"Lower Lock and Dam Tainter Gates, St. Anthony Falls Upper Harbor Project, Mississippi River, Minneapolis, Minnesota; Hydraulic Model Investigation."
34	WES TR 2-549	Jun 1960	"Filling and Emptying System, Old River Navigation Lock, Louisiana; Hydraulic Model Investigation," by J. H. Ables and F. R. Brown.
35	WES TR 2-552	Jun 1960	"Hydraulic Prototype Tests of Tainter Valve, McNary Lock, Columbia River, Washington," by E. B. Pickett.

<u>Number</u>	<u>Laboratory Code and Report Number</u>		<u>Description</u>
36	WES TR 2-556	Aug 1960	"Filling and Emptying Characteristics of Barge Canal Lock, Sacramento River Deep-Water Ship Channel Project, California; Hydraulic Model Investigation," by J. H. Ables and T. E. Murphy.
37	WES TR 2-561	Apr 1961	"Filling and Emptying System, New Poe Lock, St. Marys River, Sault Ste. Marie, Michigan; Hydraulic Model Investigation," by J. H. Ables and T. Schmidtgal.
38	STP No. 70	Apr 1961	"Intake Manifolds for Demopolis and Warrior Locks, Tombigbee River, Alabama, and Jim Woodruff Lock, Apalachicola River, Florida; Hydraulic Model Investigation," by F. T. Mertes and M. E. Nelson.
39	WES TR 2-537	Jun 1961	"Culvert Tainter Valves, New Lock No. 19, Mississippi River; Hydraulic Model Investigation."
40	STP No. 71	Jun 1961	"Filling and Emptying Systems for Dwight D. Eisenhower and Bertrand H. Snell Locks, St. Lawrence Seaway Project; Hydraulic Model Investigation," by S. Fidelman.
41	WES TR 2-573	Jul 1961	"Intake Studies, Dardanelle Lock, Arkansas River, Arkansas; Hydraulic Model Investigation," by J. H. Ables.
42	STP No. 73	Sep 1961	"Filling and Emptying Systems for Walter F. George Lock, Chattahoochee River, Alabama-Georgia; Hydraulic Model Investigation," by S. Fidelman and M. E. Nelson.
43	STP No. 74	Jan 1962	"Filling and Emptying Systems for Greenup and Markland Locks, Ohio River; Hydraulic Model Investigation," by J. J. Hartigan and F. J. Ryder.
44	STP No. 65	Jun 1962	"Laboratory Tests on Hydraulic Models of Filling and Emptying Systems for a Proposed 600-ft Lock and Dam No. 19, Mississippi River, Keokuk, Iowa; Hydraulic Model Investigation."
45	BHL TR No. 111-1		"Miter Gate Bottom Seals, Panama Canal Locks; Laboratory Investigation."
46	STP No. 66	Jun 1963	"Filling and Emptying Systems for New 1200-ft Lock No. 19, Mississippi River, Keokuk, Iowa; Hydraulic Model Investigation," by D. L. Preston and J. J. Hartigan.
47	STP No. 75	Jun 1963	"Filling and Emptying Systems for Barkley Lock, Cumberland River, Kentucky; Hydraulic Model Investigation," by S. Fidelman.
48	WES MP 2-622	Feb 1964	"Emergency Gate Performance, McAlpine Lock, Ohio River, Kentucky; Hydraulic Prototype Tests."
49	WES TR 2-651	Jun 1964	"Operating Forces on Miter-Type Lock Gates," by J. L. Grace, T. E. Murphy, and F. R. Brown.

<u>Number</u>	<u>Laboratory Code and Report Number</u>		<u>Description</u>
50	STP No. 76	Dec 1964	"Filling and Emptying Systems for St. Anthony Falls Locks, Mississippi River, Minnesota; Hydraulic Model Investigation," by S. Fidelman and J. J. Hartigan.
51	WES TR 2-678	Jun 1965	"Filling and Emptying System, Jonesville Lock, Ouachita-Black Rivers, Louisiana; Hydraulic Model Investigation," by N. R. Oswalt, J. H. Ables, M. B. Boyd, and T. E. Murphy.
52	BHL TR No. 56-1	May 1965	"Navigation Lock, The Dalles Dam, Columbia River, Oregon and Washington; Hydraulic Model Investigation," by M. J. Webster and H. P. Theus.
53	WES TR 2-685	Aug 1965	"Prototype Hawser-Force Measurements, Jackson Lock, Tombigbee River, Alabama," by J. V. Dawsey, C. J. Huval, and W. C. Blanton.
54	WES TR 2-689	Aug 1965	"Tests of Structure Orientation, Spillway, and Lock Emergency Gate, Barkley Lock and Dam, Cumberland River, Kentucky; Hydraulic Model Investigation," by T. E. Murphy and R. S. Cummins.
55	WES TR 2-698	Nov 1965	"Lock Filling and Emptying System, Holt Lock and Dam, Warrior River, Alabama; Hydraulic Model Investigation," by T. E. Murphy and J. H. Ables.
56	WES MP 2-794	Feb 1966	"Lock Culvert Outlet Basins; Hydraulic Model Investigation," by J. H. Ables and M. B. Boyd.
57	WES TR 2-713	Feb 1966	"Filling and Emptying System, Cannelton Main Lock, Ohio River, and Generalized Tests of Sidewall Port Systems for 110- by 1200-ft Locks; Hydraulic Model Investigation," by J. H. Ables and M. B. Boyd.
58	WES TR 2-718	Mar 1966	"Filling and Emptying Systems, Millers Ferry and Jones Bluff Locks, Alabama River, Alabama; Hydraulic Model Investigation," by J. H. Ables and M. B. Boyd.
59	WES TR 2-734	Jul 1966	"Culvert Pressures, Greenup Lock, Ohio River, Kentucky; Hydraulic Prototype Tests," by P. M. Smith and R. A. Yates.
60	WES TR 2-739	Sep 1966	"Filling and Emptying System, Cordell Hull Navigation Lock, Cumberland River, Tennessee; Hydraulic Model Investigation," by N. R. Oswalt and M. B. Boyd.
61	WES TR 2-743	Nov 1966	"Filling and Emptying Systems, Low-Lift Locks, Arkansas River Project; Hydraulic Model Investigation," by J. H. Ables and M. B. Boyd.
62	WES TR 2-778	May 1967	"Modernization of Filling and Emptying System, Existing McAlpine Lock (Old No.41), Ohio River, Louisville, Kentucky; Hydraulic Model Investigation," by J. H. Ables and T. E. Murphy.

<u>Number</u>	<u>Laboratory Code and Report Number</u>		<u>Description</u>
63	WES TR H-68-4	Sep 1968	"Effect of Valve Position in a Sidewall Port Filling System, Newburgh Lock, Ohio River; Hydraulic Model Investigation," by J. O. Farrell and J. H. Ables.
64	WES TR H-69-5	Apr 1969	"Filling and Emptying System, Dardanelle Lock, Arkansas River; Hydraulic Model Investigation," by J. H. Ables and M. B. Boyd.
65	WES TR H-70-2	Mar 1970	"Operating Forces on Sector Gates Under Reverse Heads; Hydraulic Model Investigation," by N. R. Oswalt.
		Dec 1979	"Appendix A: Results of Supplemental Tests; Hydraulic Model Investigation," by N. R. Oswalt and T. E. Murphy.
66	WES MP H-71-4	Feb 1971	"Calcasieu Saltwater Barrier Prototype Sector Gate Tests," by D. F. Bastian.
67	WES TR H-72-6	Sep 1972	"Navigation Conditions and Filling and Emptying System, New Bankhead Lock, Black Warrior River, Alabama; Hydraulic Model Investigation," by N. R. Oswalt, J. H. Ables, and T. E. Murphy.
68	BHL TR No. 32-1	May 1973	"Filling and Emptying System, Ice Harbor Lock, Snake River, Washington; Hydraulic Model Investigation," by L. Z. Perkins.
69	BHL TR No. 98-1	Jul 1974	"Filling and Emptying System, John Day Lock, Columbia River, Oregon and Washington; Hydraulic Model Investigation," by A. J. Chanda and L. Z. Perkins.
70	BHL TR No. 105-1	May 1975	"Intake Manifolds and Emptying Valves for Lower Monumental Lock, Snake River, Washington," by A. J. Chanda and L. Z. Perkins.
71	WES TR H-75-11	Jun 1975	"Barkley Lock Prototype Tests, Cumberland River, Kentucky," by F. M. Neilson.
72	WES MP H-75-7	Jul 1975	"Lock Design, Sidewall Port Filling and Emptying System," by T. E. Murphy.
73	BHL TR No. 115-1	Sep 1975	"Filling and Emptying System, Little Goose Lock, Snake River, Washington; Hydraulic Model Investigation," by A. J. Chanda and L. Z. Perkins.
74	WES TR H-77-7	Apr 1977	"Filling and Emptying System for Medium-Lift Locks, Trinity River, Texas; Hydraulic Model Investigation," by N. R. Oswalt.
75	WES TR H-78-9	Jun 1978	"Bay Springs Canal Surge Study, Tennessee-Tombigbee Waterway, Mississippi and Alabama; Hydraulic Model Investigation," by C. H. Tate, Jr.
76	WES MP H-78-10	Sep 1978	"Single-Valve Prototype Tests, Main Lock, Locks and Dam 26, Mississippi River, Alton, Illinois," by E. D. Hart.

<u>Number</u>	<u>Laboratory Code and Report Number</u>		<u>Description</u>
77	WES TR H-78-16	Sep 1978	"Filling and Emptying System, New Ship Lock, Mississippi River-Gulf Outlet, Louisiana; Hydraulic Model Investigation," by J. H. Ables, Jr.
78	WES TR H-78-19	Nov 1978	"Filling and Emptying System for Bay Springs Lock, Tennessee-Tombigbee Waterway, Mississippi; Hydraulic Model Investigation," by J. H. Ables, Jr.
79	BHL TR No. 126-1	Sep 1979	"Navigation Lock for Lower Granite Dam, Snake River, Washington; Hydraulic Model Investigations," by L. Z. Perkins.
80	WES TR HL-79-21	Dec 1979	"Modifications to Filling and Emptying System of Lock No. 1, Mississippi River, Minneapolis, Minnesota; Hydraulic Model Investigation," by J. H. Ables, Jr.
81	WES TR HL-80-13	Aug 1980	"Prototype Filling and Emptying System Measurements, New Bankhead Lock, Black Warrior River, Alabama," by A. R. Tool (includes Appendixes A-B).
82	WES TR HL-80-17	Sep 1980	"Lock Approach Canal Surge and Tow Squat at Lock and Dam 17, Arkansas River Project; Mathematical Model Investigation," by C. J. Huval (includes Appendix A).
83	WES TR HL-81-10	Sep 1981	"Lock Culvert Valve Loss Coefficients; Hydraulic Model Investigation," by G. A. Pickering.
84	BHL TR No. 194-1	Apr 1983	"Emergency Closure System and Flood Control Regulation Gate for Hiram M. Chittenden Locks at Lake Washington Ship Canal; Hydraulic Model Investigation," by M. M. Kubo.
85	WES TR HL-84-8	Sep 1984	"Filling and Emptying System, Walter Bouldin Lock, and Lock Culvert Valve for Coosa River Waterway, Alabama; Hydraulic Model Investigation," by J. F. George.
86	WES Draft		"John Day Lock Hydraulic Prototype Tests, Columbia River, Washington," by E. B. Pickett and F. M. Neilson.

A-3. General Bibliography

The following bibliographic items contain material pertinent to various aspects of hydraulic design of locks. The CE-sponsored reports, pertinent to filling and emptying systems and included in paragraph A-2, are excluded.

Number	Description
A1	American Society of Civil Engineers, "Hydraulic Models," <i>Manual of Engineering Practice No. 25</i> , Committee of the Hydraulics Division on Hydraulics Research, 1942.
A2	American Society of Civil Engineers, "Manual on Lock Valves," <i>Manual of Engineering Practice No. 3</i> , Committee of the Waterways Division on Lock Valves, 1930.
A3	American Society of Civil Engineers, "Nomenclature for Hydraulics," <i>Manuals and Reports on Engineering Practice No. 43</i> , Task Force of the Hydraulics Division on Nomenclature for Hydraulics, 1962.
A4	American Society of Mechanical Engineers, "American Standard Letter Symbols for Hydraulics," ASA Y10-1958, 1958.
A5	Armstrong, R. C., "Replacement-Lock and Dam No. 26: Plans Considered," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 96, No. WW1, Proc. Paper 7071, Feb 1970.
A6	Ayers, J. R., Burnett, A. L., and Stokes, R. C., "The Dry Dock Lock," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 89, No. WW2, Proc. Paper, May 1963. (Discussion: Jelley, J. F., Jr., Nov 1964; Bath, P. M., Nov 1964; Ayers, J. R., et al., May 1965.)
B1	Ball, J. W., "Hydraulic Characteristics of Gate Slots," <i>Journal of the Hydraulics Division, ASCE</i> , Vol 85, No. HY10, Proc. Paper 2224, Oct 1959. (Discussion: Thiruvengadam, A., Apr 1960;

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	McPherson, M. B., Apr 1960; Kohler, W. H., Apr 1960; Robertson, J. M., and Bennett, H. W., May 1960; Tinney, E. R., May 1960; Advani, C. I., Jun 1960; Ball, J. W., Jan 1961.)
B2	Ball, J. W., "Construction Finishes and High-Velocity Flow," <i>Journal of the Construction Division, ASCE</i> , Vol 89, No. C02, Proc. Paper 3643, Sep 1963.
B3	Ball, J. W., "Cavitation Design Criteria, Control of Flow in Closed Conduits," <i>Proceedings of the Institute</i> held at Colorado State University, Ft. Collins, Colo., 9-14 Aug 1970.
B4	Blanchett, Ch., and Quetin, B., "Mardyck Lock Acts as Salt-Water Barrier," <i>Journal of Waterways, Harbors, and Coastal Engineering, ASCE</i> , Vol 98, No. WW4, Proc. Paper 9387, Nov 1972.
B5	Blee, C. E., "Structural Elements for Emergency Closures and Unwatering Operations," <i>Transactions, ASCE</i> , Vol 116, 1951, pp 853-863.
B6	Bloor, R. W., "Lock Sizes for Inland Waterways," <i>Transactions, ASCE</i> , Vol 116, 1951, pp 864-888.
B7	Bottoms, E. E., "Practical Tonnage Capacity of Canalized Waterways," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 92, No. WW1, Proc. Paper 4644, Feb 1966. (Discussion: Santina, Wm. J. and Wesler, G. B., Aug 1966; Wellons, C. M., Aug 1966, Mahaffey, B. R., and Ferguson, W. I., Nov 1966; Lang, E. H., Nov 1966; Hallock, H. R., Nov 1966; Zeller, E. E., Nov 1966; Eden, E. W., Jr., Nov 1966; Mullaney, H. J., Nov 1966; Gaum, C. H., Nov 1966; Bottoms, E. E., May 1967.)
B8	Broome, K. R., and Gaither, W. S., "Floating Dry Docks For Ship Launching," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 96, No. WW1, Proc. Paper 7110, Feb 1970.

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B9	Brown, F. R., "Model Studies of Sector Gate Type Locks," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 84, No. WW4, Proc. Paper 1767, Sep 1958.		<i>Waterways and Harbors Division, ASCE</i> , Vol 82, No. WW2, Proc. Paper 938, Apr 1956.
B10	Brown, F. R., "Cavitation in Hydraulic Structures: Problems Created by Cavitation Phenomena," <i>Journal of the Hydraulics Division, ASCE</i> , Vol 89, No. HY1, Proc. Paper 3393, Jan 1963. (Discussion: Misra, M. S., Sep 1963; Campbell, F. B., Sep 1963; Brown, F. R., Mar 1964.)	C5	Cleary, W. E., "Bridge Clearance: Problem Needs Realistic Approach," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 82, No. WW2, Proc. Paper 937, Apr 1956. (Note Appendix A: Statement of Policy, Practice, and Procedures on Bridges, Office of the Chief of Engineers, 3 Nov 1954.)
B11	Brown, F. R., "Navigation Locks: End Filling and Emptying Systems," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 90, No. WW1, Proc. Paper 3782, Feb 1964. (Discussion: Schijf, J. B., Nov 1964; Brown, F. R., Aug 1965.)	C6	Corey, J. B. W., "Calumet-Sag Navigation Project," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 84, No. WW3, Proc. Paper 1643, May 1958.
B12	Burpee, L. H., "Canadian Section of the St. Lawrence Seaway," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 86, No. WW1, Proc. Paper 2420, Mar 1960.	C7	Cummings, E. M., "Cellular Cofferdams and Docks," ASCE Separate, Proc. Paper 1366, Sep 1957. (Discussions: Heyman, S., Mar 1958; Erzen, C. Z., Mar 1958; Cummings, E. M., Sep 1958.)
C1	Campbell, F. B., and Pickett, E. B., "Prototype-Performance and Model-Prototype Relationship," Section 3 of <i>Handbook of Applied Description Hydraulics</i> , (ed. by Davis, C. V., and Sorenson, K. E.) McGraw-Hill Book Company, New York, 1969.	D1	Daggett, L. L., and Ankey, T. D., "Determination of Lock Capacities Using Simulation Modeling," MP H-75-9, US Army Engineer Waterways Experiment Station, Vicksburg, Miss., Dec 1975.
C2	Carr, B. B., "Barge Transportation-Energizer of Production and Marketing," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 95, No. WW2, Proc. Paper 6559, May 1969.	D2	Daggett, L. L., "Sensitivity of Base Data in the Analysis of Lock Capacity: A Case Study of Lock and Dam 26, Mississippi River," TR HL-79-11, US Army Engineer Waterways Experiment Station, Vicksburg, Miss., Jul 1979.
C3	Carter, W. A., and Brown, R. D., Jr., "Overhaul of Locks in the Canal Zone," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 88, No. WW1, Proc. Paper 3047, Feb 1962.	D3	Davis, J. P., "The American Locks of the St. Lawrence Seaway," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 84, No. WW4, Proc. Paper 1771, Sep 1958.
C4	Caruthers, N. L., "Bridge Clearances: The Operator's View," <i>Journal of the</i>	D4	Davis, J. P., "Tonnage Capacity of Locks," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 95, No. WW2, Proc. Paper 6577, May 1969. (Discussion: Chandler, A. R., Nov 1969; Bottoms, E. E., Feb 1970; Davis, J. P., Aug 1970.)

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D6	Davis, J. P., and Murphy, T. E., "Experimental Research on Lock Hydraulic Systems," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 92, No. WW1, Proc. Paper 4643, Feb 1966.	D13	Dyer, H. B., "Modern Towboat and Barge Design," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 82, No. WW5, Proc. Paper 1122, Dec 1956.
D7	Decker, E. R., "Replacement-Lock and Dam No. 26: History, Objectives, and Scope," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 96, No. WW1, Proc. Paper 7070, Feb 1970.	D14	Dykes, A. E., "Lower Cumberland Project: Kentucky and Tennessee," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 82, No. WW4, Proc. Paper 1062, Sep 1956.
D8	de Neufville, R., and Hoffmeister, J. F., II, "Optimizing the Supply of Inland Water Transportation," <i>Journal of Waterways, Harbors, and Coastal Engineering, ASCE</i> , Vol 99, No. WW3, Proc. Paper 9926, Aug 1973.	E1	Edwards, F. W., and Soucek, E., "Surges in Panama Canal Reproduced in Model," <i>Transactions, ASCE</i> , Vol 110, 1945. (Discussion: Weggel, H. A.; Leyboldt, H.; Posey, C. J.; Edwards, F. W., and Soucek, E.)
D9	DeSalvo, J. S., "On Acceleration of Barge Tows," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 95, No. WW2, Proc. Paper 6545, May 1969. (Discussion: McNown, J. S., May 1970; DeSalvo, J. S., May 1970.)	E2	Eickhorst, A. G., and Koch, D. A., "Replacement-Lock and Dam No. 26: Lock Capacity Procedure and Scope," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 96, No. WW1, Proc. Paper 7094, Feb 1970.
D10	Dittbrenner, E. E., "Bridge Clearances: Problems in Northeastern United States," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 82, No. WW2, Proc. Paper 939, Apr 1956.	E3	Elder, R. A., "'Tidal' Navigation Problems at Wilson Dam," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 85, No. WW1, Proc. Paper 1983, Mar 1959.
D11	Dodge, R. O., "Design of Columbia River Pile Dikes," <i>Journal of Waterways, Harbors, and Coastal Engineering, ASCE</i> , Vol 97, No. WW2, Proc. Paper 8142, May 1971. (Discussion: Gleser, S. M., Feb 1972; Dodge, R. O., Nov 1972.)	E4	Elder, R. A., Price, J. T., and Engle, W. W., "Navigation Locks: TVA's Multiport Lock Filling and Emptying System," <i>Journal of the Waterways and Harbors Division, ASCE</i> , Vol 90, No. WW1, Proc. Paper 3788, Feb 1964. (Discussion: Elder, R. A., et al., May 1965 and Aug 1965.)
D12	Dorland, G. M., and Bethurum, G. R., Jr., "Growth of Commerce: Tennessee	E5	Elms, D. G., and Schmid, W. E., "Structural Action of Pile Cluster Dolphins," <i>Journal of the Waterways and Harbors Description Division, ASCE</i> , Vol 91, WW4, Proc. Paper 4529, Nov 1965.

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